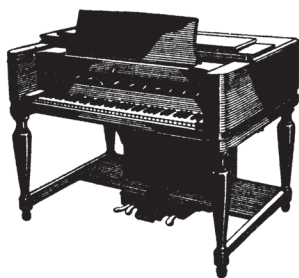


**INTRODUCTION
TO THE
HAMMOND
NOVACHORD**



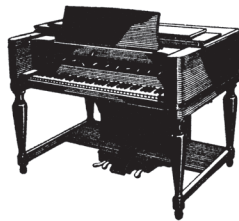
**DIRECTIONS
FOR PLAYING**



HAMMOND INSTRUMENT COMPANY

2915 North Western Avenue

Chicago, Illinois



Restored by Mike Buffington for Forgotten Futures.

Thanks to Tom Rhea and the Electronic Music
Education and Preservation Project (EMEAPP).



Forgotten Futures

FOREWORD

The Hammond Novachord, as its name suggests, is a new arrival in the world of music. In tonal beauty and variety it opens up a new vista to the lover of music, but without necessitating the study of a new technique. Anyone acquainted with the piano keyboard can perform immediately on the Novachord, but in playing the notes of simple piano pieces the player can produce at will music reminiscent of the piano, harpsichord, organ, string or reed instruments and many other qualities, in a profusion that seems hardly possible to obtain from one instrument.

No attempt has been made to imitate conventional instrumental voices; rather, the endeavor has been to incorporate in the Novachord as many truly distinctive qualities of beautiful tone as possible. We hope the suggestions in this book will be a guide to you in exploring the possibilities of Novachord music. Surely no pioneer ever followed a more interesting, fascinating, or colorful trail.

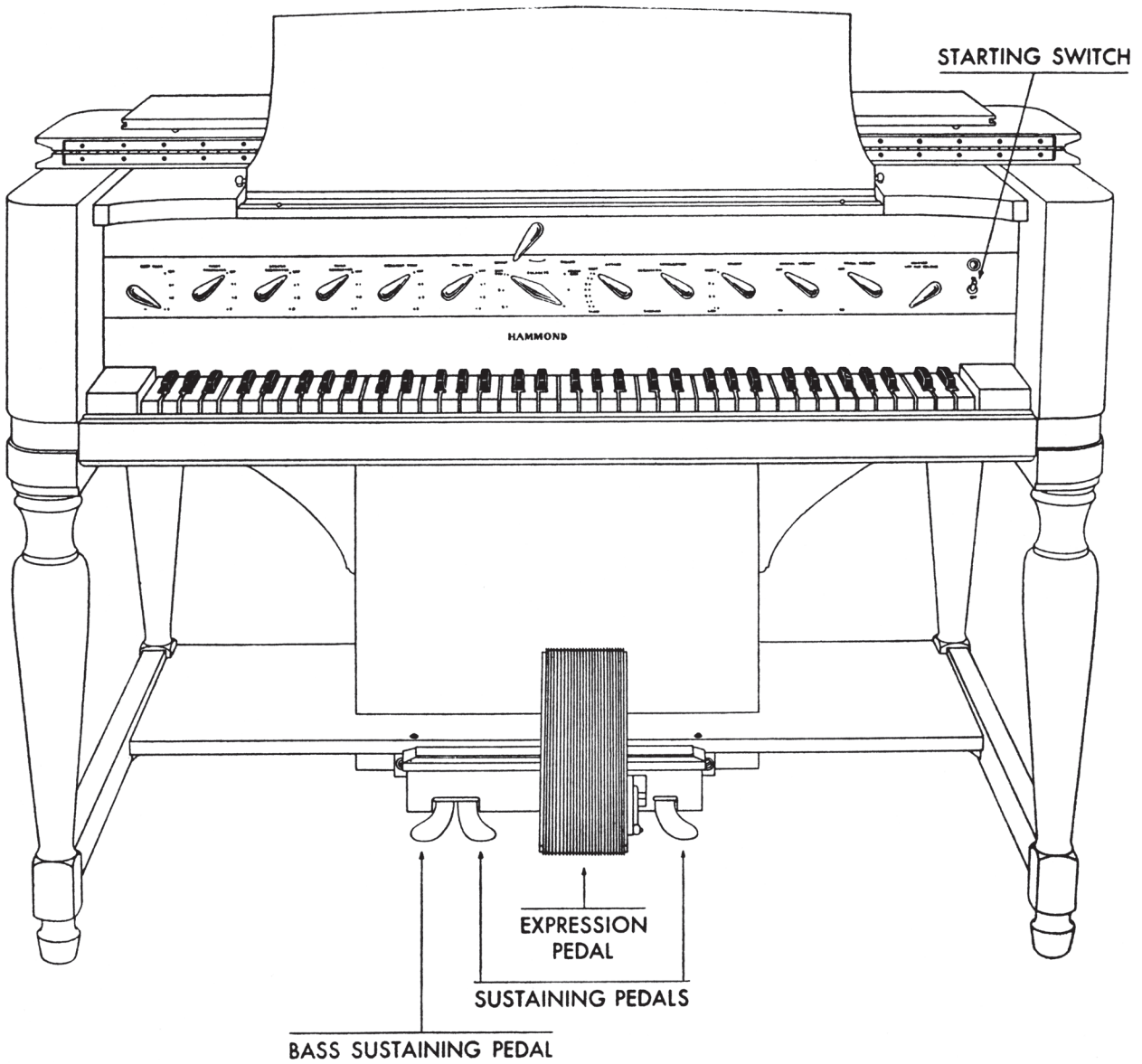


Figure 1

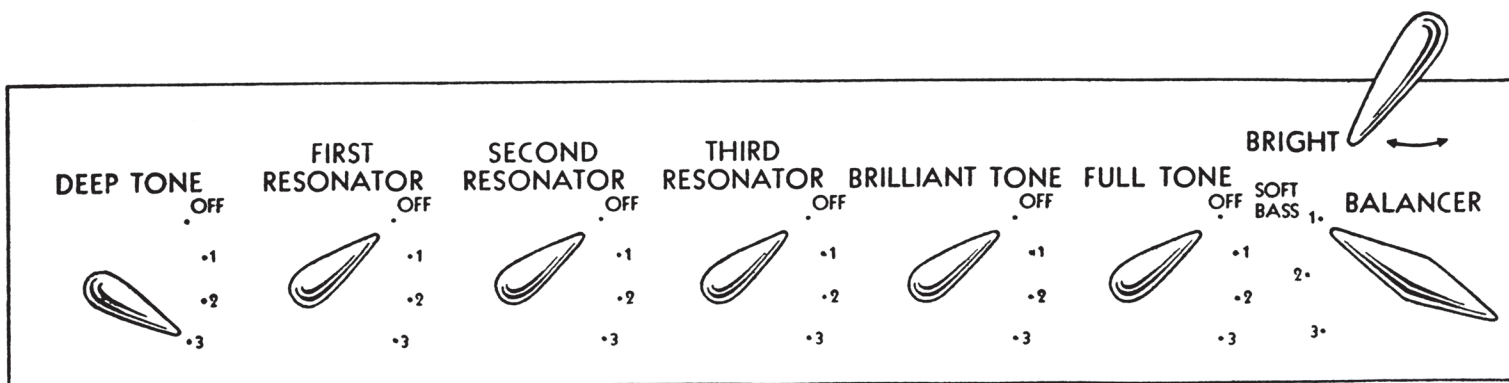


Figure 2

INTRODUCTION TO THE HAMMOND NOVACHORD

A Brief Explanation of Its Operation

The operation of the Novachord is entirely electrical. It has a full six octave keyboard and is played in much the same way a piano is played. Like an organ, volume is controlled by an expression pedal instead of by the force with which your fingers strike the keys.

The Novachord produces an enormous variety of lovely tones which are obtained through the controls on the panel just above the playing keys (see Figure 2 below). These controls are easy to use. The six to the left govern the quality or timbre of the tone. The position of the next seven controls determines what happens to the tones set up by the six tone selectors—whether they'll be percussive or sustained, how much vibrato will be in them and whether they'll be brilliant or mellow. The control at top center, for instance, acts as a mute when turned to the right; the one below it strengthens or subdues the bass.

Starting the Novachord

To start the Novachord, push up the switch at the extreme right to the "On" position and count slowly to fifteen. Then gently lift and release the lever next to it marked "Starter." The Novachord is now ready to play.

Preliminary Instructions—The Combination Control

The most useful control for a beginner on the Novachord is the one marked "Combination." It operates other controls and furnishes an easy way to obtain the two types of music most generally used. When it is pointing at "Percussion," you will get a sharp "striking" tone which, like that of a piano, quickly dies away. When pushed down to "Singing" position, it gives you a sustained tone which keeps on sounding as long as your finger is on the key.

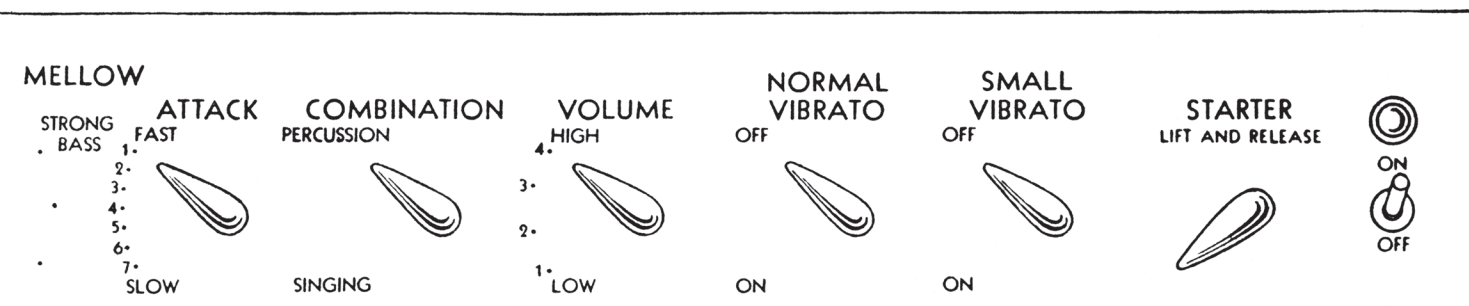


Figure 2

In order to get the “feel” of the instrument, we suggest that you play several familiar pieces using both settings of the Combination Control. When using the Singing combination, your playing should be sustained, that is, with each note held until the next one is sounded.

Organists will be right at home on the Expression Pedal but pianists usually find it takes a little practice to operate it properly. On the other hand, the use of the sustaining pedals is exactly the same as with the piano.

The Attack Control

The Attack Control determines whether the notes as played will be percussive like a piano or sustained like a violin or wind instrument. The reason why the Combination Control changes the Novachord from Percussion to Singing is because it moves the Attack Control from 1 to 5. For maximum Percussion, set this Control at 1. For normal Singing effects, set it at 5. The steps between 1 and 5 give various amounts of percussive effect; for instance, when set at 4 the Attack Control gives a result that is essentially Singing in quality but containing just a trace of sharpness at the start of each note. Such a setting is useful for brass tones. When set at 6 or 7 the Attack Control introduces a certain sluggishness into the response of the instrument which you may find useful in connection with French horn, organ and some other effects. The quickest way to learn the use and possibilities of this, as well as all the other controls, is to experiment with the various settings.

The Volume Control

This control limits the volume which the Novachord will produce. Normally it remains at 4 which is maximum volume, but can be turned down in case you wish to play quietly yet preserve the full range of the Expression Pedal.

The Vibratos

Most music is more pleasing to the ear if there is a slight pulsation or waver in the pitch of the notes. This is introduced by using either or both of the Vibrato Controls. Their best use is explained in the section on Tones.

The Expression Pedal

By means of the Expression Pedal (see Fig. 1, page 2) you can vary the volume of the Novachord at will, thus giving “life” to the music. In using it, place the entire sole of your right foot on it so that pressure with your toe increases volume and pressure with

your heel decreases it. These volume changes are best effected by a smooth, unhurried motion of the foot, particularly when you're using a percussion or piano-like attack. Never move the Expression Pedal suddenly or rapidly while a struck Percussion note or chord is still sounding.

When playing Singing Tones, more freedom is permissible in the use of the Expression Pedal. At no time, however, should it be "pumped" indiscriminately. Normally it should be moved slowly over a limited range. Try to make your use of the Expression Pedal fit the phrasing or metre of your music. As you grow more familiar with the Novachord, you'll find that the marvelous accenting this pedal can give you on sustained tones is one of the delights of the instrument.

The Sustaining Pedal

Use the sustaining pedals just as you would in playing the piano. There are two of them (see Figure 1) mounted on the same shaft and both are included on the Novachord so that the player may use either foot he chooses for pedaling. It is usually most convenient, however, to use the right foot on the Expression Pedal and the left foot on the Sustaining Pedal. Also the Bass Sustaining Pedal is located on the left and thus you are able to shift quickly from one to the other.

The Bass Sustaining Pedal (See Fig. 1, page 2) sustains only that portion of the keyboard below Middle E and is used when you wish to sustain bass notes without affecting the melody in the treble. The use of this Pedal will be discussed under the section on *Playing Technique*.

The Tone Controls

The six Tone Controls at the left of the panel can be classified as follows:

1. *Deep Tone* . . . Used full strength as a "foundation" to practically all effects. By itself is piano-like as a percussion tone and organ-like as a singing tone.
2. *First Resonator* . . . Introduces throaty, horn-like quality. Its influence is most distinctive in the middle and lower registers of the Novachord.
3. *Second Resonator* . . . A slightly brassy tone such as obtained when special mutes are employed with trumpets and trombones . . . also characteristic of the English Horn. Is effective throughout the entire Novachord range.
4. *Third Resonator* . . . A thin, piercing quality which is characteristic of reedy tones. In the lower register it introduces the rich

timbre of the 'cello. Use this effect sparingly in percussion tones and high register singing tones.

5. *Brilliant Tone* . . . Characteristic of violin-like effects and stringed instrument tone in general.

6. *Full Tone* . . . A rich, powerful quality somewhat round and brassy in character. When used full strength it overpowers almost all other effects.

7. *Mute Control* or "*Bright-Mellow*" . . . Normally left on Bright. When turned to Mellow, mutes or adds mellowness to any tone quality.

8. *Balancer* . . . Controls balance between bass and treble by adjusting volume of bass notes. Bass may be soft, medium or loud in relation to the treble notes.

Tone Considerations

We are listing and discussing below some typical Novachord tones and how to obtain them. They are described in terms of other instruments because these voices are familiar to you and you will find it easier to understand how the tones are built. However, although these imitations are interesting and useful as novelty effects, they are not nearly as important in the actual playing of the Novachord as the general effect of the music. You will seldom find experienced players using imitations as such. They will make their tone changes to fit the music and to produce the most effective contrast to tones previously used. Almost invariably you'll see them push one or more of the Tone Controls up or down a little while they're playing in order to provide the ensemble that sounds best to them.

As you play and experiment with setting the Tone Controls, try to make a habit of analyzing the particular tone you're trying to get—is it (1) percussive or sustained, (2) thin or round, (3) brilliant or mellow, (4) how much, if any, vibrato should go into it.

For quick reference, a formula or combination has been developed for describing how a particular tone is set up. The setting for the violin tone described below, for instance, reads as follows:

S 300030 $\frac{B}{3}$ —

The letter S refers to the setting of the Combination Control—if this was a percussion tone, the formula would have P in front of it. The next six figures refer to the setting of the six tone controls. $\frac{B}{3}$ means that the Mute Control is set at Bright and the Balancer beneath at 3. The dash means that the rest of the Controls remain as set by the Combination Control. Otherwise $\frac{B}{3}$ would

be followed by a figure showing the setting of the Attack lever and either VV for both Vibratos, NV for the Normal Vibrato and SV for the Small Vibrato.

Some Typical Singing Tones

Starting with the Novachord Controls adjusted for a typical piano-like tone (Combination set at Percussion) we can now easily change to any one of a number of singing tones. In following the suggestions below, try to analyze the reason for each step. This will help you to remember the function of each Control and, later on, to discover new effects of your own with greater facility.

None of the following effects can be said to be the *best* of its kind. Although they are all pleasing, useful tones, further modifications will frequently improve them for many specific purposes. The formulas are by no means to be considered inflexible — they are given only to help you get started and to provide a method for putting down combinations on printed music.

Violin Tone . . . Turn Combination Control to Singing, turn Full Tone off and set Brilliant Tone at 3. Do you see the reasons for these steps? The violin is a Singing type of instrument; therefore we first turned the Combination lever to that position. Next, the control introducing typical violin-like quality is the Brilliant Tone; therefore we turned this control on. We found the Full Tone was turned on by the Combination Control; this had no place in our effect (because it would overpower everything else) so it was turned off. We also found the Deep Tone already on—but we have already learned that this is used as a foundation for most effects, so we left it on. Finally, we know that violin playing is ordinarily accompanied by a pronounced vibrato; however, we found that both Vibrato Controls had already been turned on (by the Combination Control) so it was unnecessary for us to make any further adjustment. Thus we arrive at the formula mentioned above S 300030 $\frac{B}{3}$ —. You should practice changing from “piano” to “violin” until you can do it smoothly and surely.

Violoncello . . . Proceed exactly as for the violin tone but use the Third Resonator instead of the Brilliant Tone. This formula would read S 300300 $\frac{B}{3}$ —.

Muted Brass . . . Proceed exactly as for violin but use the Second Resonator instead of the Brilliant Tone. For some types of music you may prefer to turn off the Normal Vibrato also. There are several schools of thought as to the extent which vibrato ought to be used with some instruments. In general, however, brass instru-

ment players who use mutes usually employ a pronounced vibrato in their playing.

S 303000 $\frac{B}{3}$ — or S 30300 $\frac{B}{3}$ 5 SV

Horn Tone . . . Proceed as for the violin but use the First Resonator instead of the Brilliant Tone and turn off the Normal Vibrato. French Horn players use no vibrato whatever; however, there is a certain characteristic unsteadiness to a horn tone which is simulated by allowing the Small Vibrato to remain on. If both Vibrato Controls are left on the tone will be less imitative but very beautiful for many purposes.

S 330000 $\frac{B}{3}$ 5 SV or S 330000 $\frac{B}{3}$ —

English Horn . . . This tone is more complex in quality. A very imitative English Horn tone can be made merely by adding the Second Resonator to the 'cello tone and turning off the Normal Vibrato. Play in the middle register. This tone is also very beautiful (although less imitative) if used in the lower and middle registers with both Vibrato Controls left on.

S 303300 $\frac{B}{3}$ 5 SV or S 303300 $\frac{B}{3}$ —

Organ Tone . . . The organ is an instrument of many tone qualities and almost any Novachord Singing Tone will be organ-like if played in the manner of an organ. A characteristic "foundational" organ tone will result if we turn the Combination Control to "Singing" and turn the Normal Vibrato and Full Tone Controls off. Such an effect is useful for hymn playing. Used with both Vibrato Controls left on, the effect is charming for old favorite songs such as the Stephen Foster melodies (which are usually written in four parts, like hymns). Sometimes organ effects gain in dignity if both Vibrato Controls are turned off.

Cornet and Trumpet Tone . . . The tone of the cornet is "fatter" in quality than that of the trumpet. Turn the Combination Control to "Singing," leave the Full Tone Control on and turn the Normal Vibrato off; this will give a very typical cornet tone. Try some simple bugle calls to test this tone. A very good trumpet tone can be made in the same way as the English Horn except that the Second and Third Resonators are turned on only one degree each. Cornet and trumpet effects are greatly enhanced by avoiding a too legato touch and selecting melodies of a type ordinarily played on such instruments.

Flute Tone . . . Use the French Horn tone, turn the Mute to "Mellow" and play in the upper registers. Addition of one or two points of the Second Resonator will give more sparkle to this tone.

Some Typical Percussion Tones

You have already learned that when the Combination is turned to Percussion an effect similar to a piano is obtained. Further adjustment of the Novachord Controls will produce a wide variety of Percussion effects, many of them highly imitative of standard musical instruments. When setting up the following typical percussion tones for the first time, analyze the reason for each step as you did with the singing tones so as to further increase your familiarity with the function of each control.

Vibraharp . . . Add both Vibrato Controls to the piano effect, turn the Mute to “Mellow” and play rolled chords in the upper register. Use the Sustaining Pedal freely. P 300000 $\overset{M}{1}$ VV

Steel Guitar . . . Add Brilliant Tone and both Vibrato Controls to piano effect and play melodies like “Aloha Oe.” One or two points of the Third Resonator may improve this tone.

P300030 $\overset{B}{1}$ VV or P300130 $\overset{B}{1}$ VV

Harpsichord . . . Start with piano effect, turn Deep Tone off and add Brilliant Tone. Use for playing classics like the Bach Inventions or Mozart’s Minuet from Don Juan.

Clavichord . . . Same as Harpsichord except use the Third Resonator instead of Brilliant Tone, add Small Vibrato and turn Mute to “Mellow.” Try this effect on Beethoven’s “Minuet in G.”

Music Box . . . Same as Harpsichord except turn Mute to “Mellow” and keep the Sustaining Pedal depressed continuously. Play very simple types of rhythmic music in the extreme high register.

Banjo . . . Same as Harpsichord except use Third Resonator instead of Brilliant Tone. Addition of one point of Second Resonator will give a little more body to the tone. Play in middle register with quickly rolled, staccato chords. Use no Sustaining Pedal.

Playing Technique

Thus far we have devoted most of our attention to the Novachord Controls and the formation of various musical effects. Although the technique of ordinary piano playing is adequate when using many of these effects (particularly the percussion tones) the full charm of Novachord music requires certain easily mastered

modifications of piano technique. Basically, there are three kinds of Novachord keyboard technique: 1. Piano touch. 2. Organ touch. 3. Melody with Accompaniment (a combination of piano and organ touch.)

Piano Touch

Piano touch at the Novachord is essentially the same as at the piano save that it need not be controlled so accurately as when playing the piano. At the Novachord it is never necessary to strike a key with great force. If more power is required it is only necessary to depress the Expression Pedal a little further.

Piano touch is used with all percussion tones and is an integral part of Melody-with-Accompaniment playing as will be explained.

Organ Touch

Organ touch differs from piano touch chiefly in the fact that the keys are “depressed” instead of “struck” and each key is held down as long as you wish that note to sound.

Adjust the Novachord controls for a good singing tone (such as the violin described in the section devoted to singing tones) and play the following passage just as you would at the piano.

EXAMPLE 1



You will probably observe that the use of typical piano touch produces a choppy effect that fails to do justice to a beautiful singing tone. Organists play smoothly by changing fingers on a note while it is held down so as to place the hand in a better position for the next note. In Example 2 this is illustrated first in a single note passage, followed by a repetition of Example 1 with shifting fingering marked so as to obtain a smooth, *legato* effect. There is no set rule for this type of fingering. It is simply a matter of convenience in reaching the next note which would be out of range without a

finger shift and the easiest way is apt to be the best way. In Example 2 you should also observe that some of the notes have been tied together. This is always best (except in melody notes) when repeated notes occur in music of this type.

EXAMPLE 2

Example 2 is a musical score for a piece in C major, 4/2 time, marked *Andante*. The melody is written in the treble clef and consists of 16 measures. Fingerings are indicated above the notes: 1, 2, (3-1), 5, 4, 2, (3-5), 2, (3-2), 5, (4-5), 1, 5, 1, 2. The piano accompaniment is written in the bass clef and consists of 16 measures. Fingerings are indicated below the notes: 2, 5, 1, 3, 4, 1, 5, 4, 2, 5, 3, 5, 3, 2, 3, 4, 5, 1, 3, 3, 5, 4, 5, 4, 5, 4, 2. The melody and accompaniment are tied together in the first measure.

For further examples of this type of music, see any book of old favorite songs. Selections from a standard hymn book are excellent for practicing organ touch.

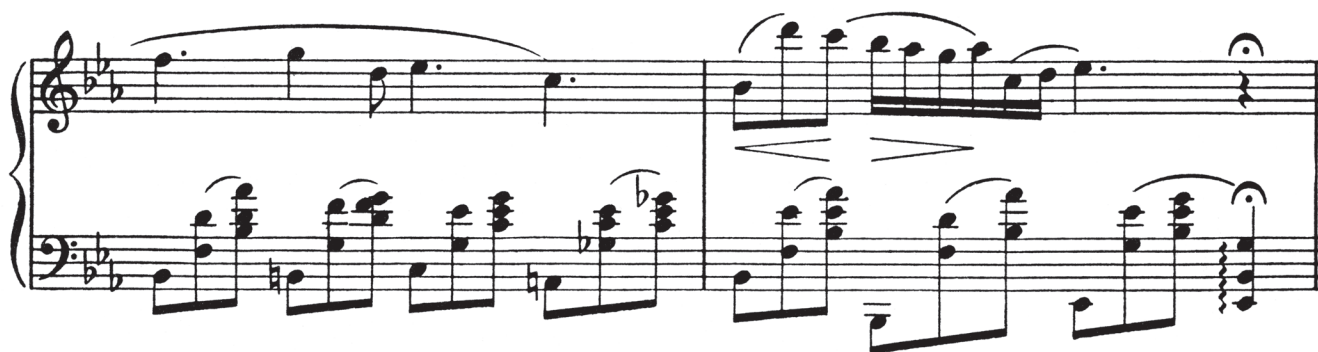
Melody with Accompaniment

Melodies generally are most pleasing when played with tones of the singing type. It is also pleasing when a melody is contrasted against a piano or harp-like percussion tone accompaniment. It is possible for the Novachordist to accompany singing melodies in this manner by using organ touch for the melody and staccato piano touch for the accompaniment. If, as is usually the case, the melody is in the treble and the accompaniment in the bass, this effect is particularly easy to obtain and is enhanced by the use of the bass sustaining pedal.

With any good singing tone play the following example just as it is written.

EXAMPLE 3

Example 3 is a musical score for a piece in B-flat major, 12/8 time. The melody is written in the treble clef and consists of 12 measures. The piano accompaniment is written in the bass clef and consists of 12 measures. The melody is marked *espress* and the accompaniment is marked *dolce*. The melody and accompaniment are tied together in the first measure.



Example 4 contains exactly the same notes as example 3. But the time value of the left hand notes has been shortened and the effect of a pedal has been added. These left hand notes should be played with a staccato piano touch and the pedaling should be done with the bass sustaining pedal. First try the left hand alone and notice that notes played in this manner with sustaining pedal sound like percussion tones.

Finally add the right hand melody played with a smooth organ touch and practice this style of playing until you have it mastered.

EXAMPLE 4

The image shows a musical score for a piano piece, labeled 'EXAMPLE 4'. The right hand has a melody with a long note followed by a series of eighth notes. The left hand has a staccato accompaniment of chords, with a bass sustaining pedal indicated by a wavy line. The key signature has two flats (B-flat and E-flat). The score is divided into three systems. The first system includes the instruction 'p' (piano) and 'espress dolce' (expressive and sweet). The left hand notes are marked with 'Ped' and an asterisk (*). The right hand notes are marked with a wavy line. The second system continues the melody and accompaniment. The third system continues the melody and accompaniment. The left hand notes are marked with 'Ped' and an asterisk (*). The right hand notes are marked with a wavy line.



With comparatively little practice you will find this style of playing applicable to a wide selection of musical numbers.

You may employ a similar method in order to play the melody in the lower register using such beautiful effects as a 'cello tone. In this instance it is necessary to frequently cross the left hand over the right (as in piano playing) and it will be noticed that both melody and accompaniment are affected by the sustaining pedal. Therefore it is best to make sure that the sustaining pedal is released just before each point where the melody moves to a different note; otherwise the melody notes will run together.

If at any time the accompaniment seems to lack sufficient percussive quality, moving the Attack Control to 4 instead of 5 will have the desired effect.

Choice of Effects

Outside of a few obvious cases, there are no rules whatever regarding the choice of tone qualities for any specific musical composition. The obvious cases referred to would include the use of steel guitar for Hawaiian music or organ effects for hymns. The best rule to follow is: *Any music sounds well with any Novachord effect if it is well played.* One of the pleasant features of Novachord playing is the fun of selecting various effects; naturally this pleasure will be the greater if the tone qualities you select are of your own choice.

If, when studying the section devoted to tone qualities, you made mental notes of the reasons for the various changes of Controls, you should now find it easy to go directly from one tone to another without having to return to a piano effect each time as a starting point. By this time also, you will probably have discovered dozens of new effects not described in this book.

No two expert Novachordists use precisely the same setting of the Controls for the various standard effects. Each player is apt to have his favorite "violin," "steel guitar" and other tones. Soon you will join their ranks and will be playing the music you like best with lovely tone qualities which are distinctly your own. Should you require any further assistance in developing your playing of the Hammond Novachord, your Hammond dealer will be glad to furnish you with information and suggestions.

SOME SUGGESTED NOVACHORD COMBINATIONS

	Combination	Deep-Tone	1st Res.	2nd Res.	3rd Res.	Brill. Tone	Full Tone	Bright-Mellow	Attack	Normal Vibrato	Small Vibrato
PIANO	P	—	—	—	—		3	M	—	—	—
VIOLIN	S	—	—	—	—	3	○	B	—	—	—
FLUTE	S	—	3	—	—	—	○	M	—	OFF	—
TROMBONE	S	—	—	—	—	—	—	M	—	—	—
CELLO	S	—	—	—	3	—	○	B	—	—	—
ENGLISH HORN	S	—	—	3	—	—	○	B	—	OFF	—
BASSOON	S	1	3	3	2	—	○	B	—	OFF	—
GUITAR	P	—	—	—	3	3	—	B	—	ON	ON
HARMONIUM	S	—	—	—	—	—	○	B	—	OFF	—
HARPSICHORD	P	○	—	—	—	3	—	B	—	—	—
BRASS ENSEMBLE	S	—	—	3	—	—	○	B	—	OFF	—
SLEIGH BELLS	P	—	—	—	—	—	3	M	—	ON	ON
TRUMPET	S	—	—	—	—	—	—	B	—	OFF	—
CELESTE	P	1	—	—	3	—	—	M	—	—	—
OBOE	S	⊖	—	—	3	—	○	B	—	OFF	—
SAXOPHONE	S	—	—	3	—	3	—	M	—	—	—
FRENCH HORN	S	—	3	—	—	—	○	M	—	OFF	—
PICCOLO AND DRUMS	P	2	—	3	—	—	—	M	4	—	ON
BANJO	P	○	—	—	3	3	—	B	—	—	—
CLAVICHORD	P	○	—	—	3	—	—	M	—	—	—
VIBRAPHONE	P	—	3	—	—	—	—	M	—	ON	ON
CORNET	S	—	3	3	—	—	○	B	—	OFF	—
HAWAIIAN GUITAR	P	—	—	—	—	3	—	B	—	ON	ON
MUSIC BOX	P	○	—	—	—	3	—	M	—	—	—
STRING ENSEMBLE	S	—	—	—	—	3	○	B	—	—	—
CHIMES	P	—	3	3	—	—	—	B	—	—	ON

NOTE: Set combination control first. Then make additional settings as shown. Dashes indicate controls were set automatically by the Combination control. In setting the combination lever to "singing," first move it sharply to "percussion" to cancel all previous settings. Set "Balancer" as required.